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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/566,780 | 01/31/2006 | Roland Klaus | 2003P07891WOUS | 7743 |

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

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| EXAMINER |
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KIM, TAE JUN

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| ART UNIT | PAPER NUMBER |
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3746

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| MAIL DATE | DELIVERY MODE |
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06/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/566,780 | Applicant(s) KLAUS ET AL. | |
| | Examiner Ted Kim | Art Unit 3746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/31/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) 23-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 18-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/31/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- I. Claims 16-22, drawn to a method for increasing gas turbine efficiency, classified in class 60, subclass 772.
- II. Claims 23-30, drawn to a gas turbine system, classified in class 60, subclass 39.181.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the method requires material properties of non-isothermal evaporation and condensation whereas the apparatus requires many special features not required in the method, including a pump, separator, mixer, third & fourth heat exchangers, etc. and the method can be performed with substantially different way, e.g. with a single heat exchanger, without flow separation and remixing, etc.

3. During a telephone conversation with John Musone on June 10, 2008 a provisional election was made without traverse to prosecute the invention of group I, claims 16-22.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 23-30 have been withdrawn from further consideration by the examiner as being directed to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Vakil et al (6,173,563). Vakil et al teach a method for increasing the efficiency of a gas turbine (see Fig. 3) system, comprising: transferring heat energy (in the heat recovery steam generator) from a waste gas of a gas turbine to a water-steam flow of a steam turbine 20; further transferring additional heat energy in the NH₃/H₂O vaporizer from the waste gas to a working medium of a thermodynamic circulation process (see Fig. 4), the working medium comprising two materials with non-isothermal evaporation and condensation properties (see col. 3, lines 42+; col. 5, lines 63+); wherein the thermodynamic circulation process is a Kalina cycle (col. 3, lines 42+).

7. Claims 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Scharpf (5,842,345). Scharpf teaches a method for increasing the efficiency of a gas turbine

system, comprising: transferring heat energy in 3 from a waste gas 1 of a gas turbine to a water-steam flow of a steam turbine 9, 11; further transferring additional heat energy from the waste gas to a working medium 32 of a thermodynamic circulation process, the working medium comprising two materials with non-isothermal evaporation and condensation properties; wherein the thermodynamic circulation process is a Kalina cycle (note that the cycle uses steam and ammonia and the composition changes depending on location (col. 7, lines 12+) and thus by definition meets the requirements of a Kalina cycle).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharpf (5,842,345) in view of Ransinghe et al (6,058,695). Sharpf teaches a method for increasing the efficiency of a gas turbine system, comprising: transferring heat energy in 3 from a waste gas 1 of a gas turbine to a water-steam flow of a steam turbine 9, 11; further transferring additional heat energy from the waste gas to a working medium 32 of a thermodynamic circulation process, the working medium comprising two materials with non-isothermal evaporation and condensation properties; wherein the

thermodynamic circulation process is a Kalina cycle (note that the cycle uses steam and ammonia and the composition changes depending on location (col. 7, lines 12+) and thus meets the requirements of a Kalina cycle). Sharpf teaches what appears to be by definition a Kalina cycle. Ransinghe et al is cited to show that it is well known to employ a Kalina cycle using ammonia and water to recover the waste heat of a gas turbine engine. It would have been obvious to one of ordinary skill in the art to employ a Kalina cycle, as taught by Ransinghe et al, in order to recover the heat from the exhaust of Sharpf.

Allowable Subject Matter

10. Claims 18-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer, can be reached at 571-272-7118. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>

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|------------------------|-------------------|--------------|
| /Ted Kim/ | Telephone | 571-272-4829 |
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| June 18, 2008 | Fax (After Final) | 571-273-8300 |
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